SUPERVISOR'S STATEMENT

Thesis title:	Metabolomics of clinically important *Aspergillus fumigatus* and *Rhizopus microsporus* in the diagnoses of invasive fungal infections
Author:	Rutuja Hiraji Patil, MSc.
Supervisor:	prof. Ing. Vladimír Havlíček, Dr.

I am pleased to provide Rutuja Hiraji Patil with this supportive statement and evaluate her excellent research achievements in infection metallomics. Rutuja has considerably impacted the development of this brand-new discipline combining analytical chemistry, bioinformatics, and diagnostics for critical care medicine. She has developed many constitutional analytical protocols based on the solid phase and liquid-liquid extractions, chromatographic separations, and accurate mass spectrometry data evaluation. These research fields are crucial for clinical diagnostics, developing future patient management, and therapeutic intervention plans for diseases like invasive fungal and bacterial infections. Rutuja's work in these fields has gained full recognition, represented by her papers in distinguished journals. I believe that Rutuja will become an excellent expert in infection diagnostics and a valuable resource for her future Ph.D. students in analytical chemistry.

I had the privilege to meet Rutuja in late 2018 in Pune, India, where I presented a talk at the 10th Annual Meeting of the Proteomics Society & International Conference on "Proteomics for Cell Biology and Molecular Medicine" at the National Centre for Cell Science. After the talk, she contacted me and argued against the selected claims I presented in a talk entitled "Microbial proteomics, imaging mass spectrometry and microbial metabolomics on track of infectious diseases." I think I addressed her concerns sufficiently, so she soon enrolled in a Ph.D. program at Palacký University and, in less than six months, presented the first two papers in Vienna (Škríba, A., Dobiáš, R., Pluháček, T., Novák, J., Patil., R., Luptáková, D., Tomášková, H., Havlíček, V., Urinal siderophores on the rise of infection metallomics and Patil, R., Dobiáš, R., Škríba, A., Pluháček, T., Luptáková, D., Palyzová, A., Havlíček, V., On the threshold between Aspergillus fumigatus colonization and proliferation in a host). The organizers awarded one of the presentations at that 31st MassSpec Forum, Feb 25-26, 2020. The next four years with her was an enjoyable speedway race that flourished with multiple publications in outstanding journals. Some papers were published by the American Society for Microbiology or Wiley, first quartile and decile (WoS), respectively.

Rutuja has been a talented and hard-working student. She was the principal investigator of a successfully solved Palacky University grant in the Igracek call, during which she learned peptidomics and switched her gears towards single-cell analysis. She spent three months at Imperial College in London and learned much about next-generation sequencing and gene expression. Having Rutuja onboard in any future grant proposal will provide better success rates in Horizon and ERC calls, as we plan in the field of host-pathogen interactions and superinfections.

The skills of Rutuja do not end with her in-field research she carried out in Czechia. She is very friendly and always willing to help others with their tasks at work and beyond. She is an active sportswoman; she likes biking, jogging, and spinning. And she is a great dancer and karaoke singer.

During her PhD studies, Rutuja Hiraji Patil carried out the experiments carefully, was able to critically evaluate the results obtained and draw conclusions beneficial for further progress in the field under study. She wrote the publications on her own. I recommend Rutuja H. Patil's dissertation for defence and further proceedings for the award of the Ph.D. degree. I hereby certify that I carefully read the thesis, agreed with the applicant on corrections, and claim that the dissertation meets the requirements for its defense.

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Supervisor's signature

In Olomouc, June 19, 2023